

Appl. No. 09/917,549
Amdt. Dated August 5, 2004
Reply to Office action of May 5, 2004

REMARKS/ARGUMENTS

Reconsideration of the application is requested.

Claims 1-3 and 5-10 remain in the application. Claim 1 has been amended. Claim 4 has been cancelled.

In the section entitled "Claim Rejections - 35 USC § 103" on pages 2-4 of the above-mentioned Office action, claims 1-3 and 5-10 have been rejected as being unpatentable over Ye et al. (US Pat. No. 6,080,529) in view of Subramanion et al. (US Pat. No. 5,986,344) under 35 U.S.C. § 103(a).

The rejection has been noted and claim 1 has been amended in an effort to even more clearly define the invention of the instant application. Support for the changes is found on page 14, line 10 of the specification.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 1 calls for, inter alia:

providing an organic antireflection layer on a semiconductor layer, the semiconductor layer being made of silicon dioxide;

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etching the organic antireflection layer with an etching gas composition containing at least 80% hydrogen and nitrogen; and

achieving a selectivity of more than 1:50 of the organic antireflection layer etching in relation to etching the semiconductor layer lying underneath the organic antireflection layer.

The Examiner has referred to column 12, lines 38-42 of Ye et al. as disclosing an etch stop layer 218 located beneath the organic material 220 to stop the etchant formed of hydrogen and nitrogen. However, it is clearly stated in the cited passage of Ye et al. that the etch stop layer located beneath the high-temperature organic-based patterned mask material (layer 220) is a tantalum nitride layer (layer 218) which is used as an etch stop layer when etching the high-temperature organic-based layer 220. A silicon dioxide layer 222 which is provided over the high-temperature organic-based layer, however, is used as an etch stop layer when removing the residual photoresist imaging layer 224 on top of the high-temperature organic-based layer. The etching criteria with respect to the removal of a photoresist imaging layer are, however, completely different from the etching criteria with respect to etching an organic-based layer, in particular an ARC layer as carried out in accordance with the invention of the instant application. For example, the removal of the residual photoresist imaging layer is carried out isotropically in contrast to an anisotropic dry etch process

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used for etching the organic-based layer, in particular an ARC layer provided on a silicon dioxide layer, in which the etchant contains 80% hydrogen and nitrogen and achieves a selectivity of more than 1 to 50% with respect to the silicon dioxide layer.

Subramanian et al. do not make up the deficiencies of Ye et al.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Claim 1 is, therefore, believed to be patentable over the art and since all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1-3 and 5-10 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate a telephone call so that, if possible, patentable language can be worked out.

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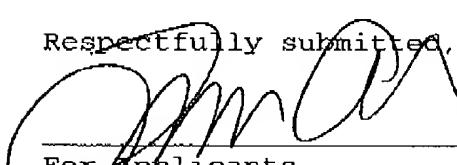
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If an extension of time for this paper is required, petition for extension is herewith made. Please charge any fees which might be due with respect to 37 CFR Sections 1.16 and 1.17 to

the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,


For Applicants

LAURENCE A. GREENBERG
REG. NO. 29,308

YC

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Lerner and Greenberg, P.A.
Post Office Box 2480
Hollywood, FL 33022-2480
Tel: (954) 925-1100
Fax: (954) 925-1101